RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: _10/591,540_
Source: _1FWP_
Date Processed by STIC: _9/18/06_

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PATENT APPLICATION: US/10/591,540   TIME: 15:20:32

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Output Set: N:\CRF4\09182006\J591540.raw

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 3 <110> APPLICANT: Frohberg, Claus
 4         Koetting, Oliver
 5         Ritte, Gerhard
 6         Steup, Martin
 8 <120> TITLE OF INVENTION: Plants with reduced activity of multiple starch
phosphorylating enzymes
10 <130> FILE REFERENCE: 65084.000023
C--> 12 <140> CURRENT APPLICATION NUMBER: US/10/591,540
13 <141> CURRENT FILING DATE: 2006-09-01
15 <150> PRIOR APPLICATION NUMBER: EP04090088.8
16 <151> PRIOR FILING DATE: 2004-03-05
18 <150> PRIOR APPLICATION NUMBER: EP04090121.7
19 <151> PRIOR FILING DATE: 2004-03-29
21 <150> PRIOR APPLICATION NUMBER: US60/550,022
22 <151> PRIOR FILING DATE: 2004-03-05
24 <150> PRIOR APPLICATION NUMBER: EP04090203.3
25 <151> PRIOR FILING DATE: 2004-05-21
27 <150> PRIOR APPLICATION NUMBER: EP04090484.9
28 <151> PRIOR FILING DATE: 2004-12-09
30 <160> NUMBER OF SEQ ID NOS: 31
32 <170> SOFTWARE: PatentIn version 3.1
34 <210> SEQ ID NO: 1
35 <211> LENGTH: 3591
36 <212> TYPE: DNA
37 <213> ORGANISM: Arabidopsis thaliana
39 <220> FEATURE:
40 <221> NAME/KEY: CDS
41 <222> LOCATION: (1)..(3591)
42 <223> OTHER INFORMATION:
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50 act aga aac tca tca tca tca ctt cct aga ctc gtt aac atc act cac      96
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52              20                  25                  30
54 aga gtt aat ctc agc cac caa tct cac cga ctc aga aac tcc aat tct     144
55 Arg Val Asn Leu Ser His Gln Ser His Arg Leu Arg Asn Ser Asn Ser
56           35                  40                  45
58 cgt ctc act tgc act gct act tct tct tcc acc att gag gaa caa cgg     192
59 Arg Leu Thr Cys Thr Ala Thr Ser Ser Ser Thr Ile Glu Glu Gln Arg
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 68                    85                  90                  95
 70 aaa gag att ggt tca tgg aaa aag aaa tcg cct ttg aat tgg agt gag        336
 71 Lys Glu Ile Gly Ser Trp Lys Lys Lys Ser Pro Leu Asn Trp Ser Glu
 72                    100                 105                 110
 74 aat gga tgg gtt tgt gag ttg gaa ctt gac ggt ggt cag gtt ttg gag        384
 75 Asn Gly Trp Val Cys Glu Leu Glu Leu Asp Gly Gly Gln Val Leu Glu
 76           115                 120                 125
 78 tat aag ttt gtc att gtt aag aat gat ggt tca ctt tca tgg gaa tct        432
 79 Tyr Lys Phe Val Ile Val Lys Asn Asp Gly Ser Leu Ser Trp Glu Ser
 80           130                 135                 140
 82 ggt gat aat cgt gtc ctt aag gtt cca aat tct ggg aat ttt tct gtt        480
 83 Gly Asp Asn Arg Val Leu Lys Val Pro Asn Ser Gly Asn Phe Ser Val
 84 145                 150                 155                 160
 86 gtt tgt cat tgg gat gct act aga gaa acc ctt gat ttg cct cag gag        528
 87 Val Cys His Trp Asp Ala Thr Arg Glu Thr Leu Asp Leu Pro Gln Glu
 88                    165                 170                 175
 90 gtt ggt aat gat gat gat gtt ggt gat ggt ggg cat gag agg gat aat        576
 91 Val Gly Asn Asp Asp Asp Val Gly Asp Gly Gly His Glu Arg Asp Asn
 92           180                 185                 190
 94 cat gat gtt ggt gat gat aga gta gtg gga agt gaa aat ggt gcg cag        624
 95 His Asp Val Gly Asp Asp Arg Val Val Gly Ser Glu Asn Gly Ala Gln
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 98 ctt cag aag agt aca ttg ggt ggg caa tgg caa ggt aaa gat gcg tcc        672
 99 Leu Gln Lys Ser Thr Leu Gly Gly Gln Trp Gln Gly Lys Asp Ala Ser
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102 ttt atg cgt tct aat gat cat ggt aac aga gaa gtt ggt aga aat tgg        720
103 Phe Met Arg Ser Asn Asp His Gly Asn Arg Glu Val Gly Arg Asn Trp
104 225                 230                 235                 240
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107 Asp Thr Ser Gly Leu Glu Gly Thr Ala Leu Lys Met Val Glu Gly Asp
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112           260                 265                 270
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115 Ile Val Gly Ser Val Glu Arg Glu Glu Arg Leu Lys Ala Leu Ile Tyr
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118 tct gca att tat ttg aag tgg ata aac aca ggt cag att cct tgt ttt        912
119 Ser Ala Ile Tyr Leu Lys Trp Ile Asn Thr Gly Gln Ile Pro Cys Phe
120           290                 295                 300
122 gaa gat gga ggg cat cac cgt cca aac agg cat gcc gag att tcc aga        960
123 Glu Asp Gly Gly His His Arg Pro Asn Arg His Ala Glu Ile Ser Arg
124 305                 310                 315                 320
126 ctt ata ttc cgt gag ttg gag cac att tgc agt aag aaa gat gct act       1008
127 Leu Ile Phe Arg Glu Leu Glu His Ile Cys Ser Lys Lys Asp Ala Thr
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130 cca gag gaa gtg ctt gtt gct cgg aaa atc cat ccg tgt tta cct tct    1056
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134 ttc aaa gca gag ttt act gca gct gtc cct cta act cgg att agg gac    1104
135 Phe Lys Ala Glu Phe Thr Ala Ala Val Pro Leu Thr Arg Ile Arg Asp
136         355             360             365
138 ata gcc cat ccg aat gat att cct cat gat ctc aag caa gaa atc aac    1152
139 Ile Ala His Arg Asn Asp Ile Pro His Asp Leu Lys Gln Glu Ile Lys
140     370             375             380
142 cat acg ata caa aat aag ctt cac cgg aat gct ggt cca gaa gat cta    1200
143 His Thr Ile Gln Asn Lys Leu His Arg Asn Ala Gly Pro Glu Asp Leu
144 385             390             395             400
146 att gca aca gaa gca atg ctt caa cga att acc gag acc cca gga aaa    1248
147 Ile Ala Thr Glu Ala Met Leu Gln Arg Ile Thr Glu Thr Pro Gly Lys
148             405             410             415
150 tat agt gga gac ttt gtg gag cag ttt aaa ata ttc cat aat gag ctt    1296
151 Tyr Ser Gly Asp Phe Val Glu Gln Phe Lys Ile Phe His Asn Glu Leu
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154 aaa gat ttc ttt aat gct gga agt ctc act gaa cag ctt gat tct atg    1344
155 Lys Asp Phe Phe Asn Ala Gly Ser Leu Thr Glu Gln Leu Asp Ser Met
156         435             440             445
158 aaa att tct atg gat gat aga ggt ctt tct gcg ctc aat ttg ttt ttt    1392
159 Lys Ile Ser Met Asp Asp Arg Gly Leu Ser Ala Leu Asn Leu Phe Phe
160     450             455             460
162 gaa tgt aaa aag cgc ctt gac aca tca gga gaa tca agc aat gtt ttg    1440
163 Glu Cys Lys Lys Arg Leu Asp Thr Ser Gly Glu Ser Ser Asn Val Leu
164 465             470             475             480
166 gag ttg att aaa acc atg cat tct cta gct tct tta aga gaa aca att    1488
167 Glu Leu Ile Lys Thr Met His Ser Leu Ala Ser Leu Arg Glu Thr Ile
168             485             490             495
170 ata aag gaa ctt aat agc ggc ttg cga aat gat gct cct gat act gcc    1536
171 Ile Lys Glu Leu Asn Ser Gly Leu Arg Asn Asp Ala Pro Asp Thr Ala
172         500             505             510
174 att gca atg cgc cag aag tgg cgc ctt tgt gag atc ggc ctc gag gac    1584
175 Ile Ala Met Arg Gln Lys Trp Arg Leu Cys Glu Ile Gly Leu Glu Asp
176         515             520             525
178 tac ttt ttt gtt cta cta agc aga ttc ctc aat gct ctt gaa act atg    1632
179 Tyr Phe Phe Val Leu Leu Ser Arg Phe Leu Asn Ala Leu Glu Thr Met
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182 gga gga gct gat caa ctg gca aaa gat gtg gga tca aga aac gtt gcc    1680
183 Gly Gly Ala Asp Gln Leu Ala Lys Asp Val Gly Ser Arg Asn Val Ala
184 545             550             555             560
186 tca tgg aat gat cca cta gat gct ttg gtg ttg ggt gtt cac caa gta    1728
187 Ser Trp Asn Asp Pro Leu Asp Ala Leu Val Leu Gly Val His Gln Val
188             565             570             575
190 ggt cta tct ggt tgg aag caa gaa gaa tgt tta gcc att gga aat gaa    1776
191 Gly Leu Ser Gly Trp Lys Gln Glu Glu Cys Leu Ala Ile Gly Asn Glu
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195 Leu Leu Ala Trp Arg Glu Arg Asp Leu Leu Glu Lys Glu Gly Glu Glu
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199 Asp Gly Lys Thr Ile Trp Ala Met Arg Leu Lys Ala Thr Leu Asp Arg
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202 gca cgc aga tta aca gca gaa tat tct gat ttg ctt ctt caa ata ttt   1920
203 Ala Arg Arg Leu Thr Ala Glu Tyr Ser Asp Leu Leu Leu Gln Ile Phe
204 625             630             635             640
206 cct cct aat gtg gag att tta gga aaa gct cta gga att cca gag aat   1968
207 Pro Pro Asn Val Glu Ile Leu Gly Lys Ala Leu Gly Ile Pro Glu Asn
208             645             650             655
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211 Ser Val Lys Thr Tyr Thr Glu Ala Glu Ile Arg Ala Gly Ile Ile Phe
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215 Gln Ile Ser Lys Leu Cys Thr Val Leu Leu Lys Ala Val Arg Asn Ser
216         675             680             685
218 ctt ggt tct gag ggc tgg gat gtc gtt gta cct gga tcg acg tct ggg   2112
219 Leu Gly Ser Glu Gly Trp Asp Val Val Val Pro Gly Ser Thr Ser Gly
220         690             695             700
222 aca tta gtt cag gtt gag agc att gtt ccg gga tca ttg cca gca act   2160
223 Thr Leu Val Gln Val Glu Ser Ile Val Pro Gly Ser Leu Pro Ala Thr
224 705             710             715             720
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227 Ser Gly Gly Pro Ile Ile Leu Leu Val Asn Lys Ala Asp Gly Asp Glu
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230 gag gta agt gct gct aat ggg aac ata gct gga gtc atg ctt ctg cag   2256
231 Glu Val Ser Ala Ala Asn Gly Asn Ile Ala Gly Val Met Leu Leu Gln
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234 gag ctg cct cac ttg tct cac ctt ggc gtt aga gcg cgg cag gag aaa   2304
235 Glu Leu Pro His Leu Ser His Leu Gly Val Arg Ala Arg Gln Glu Lys
236         755             760             765
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251 Ala Thr Lys Lys Thr Asp Lys Asn Ser Leu Ser Lys Lys Lys Thr Asp
252         820             825             830
254 aag aag agc tta tct atc gat gat gaa gaa tca aag cct ggt tcc tca   2544
255 Lys Lys Ser Leu Ser Ile Asp Asp Glu Glu Ser Lys Pro Gly Ser Ser
256         835             840             845
258 tct tcc aat agc ctc ctt tac tct tcc aag gat atc cct agt gga gga   2592
259 Ser Ser Asn Ser Leu Leu Tyr Ser Ser Lys Asp Ile Pro Ser Gly Gly
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RAW SEQUENCE LISTING   DATE: 09/18/2006
PATENT APPLICATION: US/10/591,540   TIME: 15:20:32

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264 865              870              875              880
266 gct gca tgt ggt ctt ctt gca tct tta gca gaa gcc tct agt aaa gtg    2688
267 Ala Ala Cys Gly Leu Leu Ala Ser Leu Ala Glu Ala Ser Ser Lys Val
268              885              890              895
270 cac agc gaa cac gga gtt ccg gca tca ttt aag gtt cca act gga gtt    2736
271 His Ser Glu His Gly Val Pro Ala Ser Phe Lys Val Pro Thr Gly Val
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274 gtc ata cct ttt gga tcg atg gaa tta gct tta aag caa aat aat tcg    2784
275 Val Ile Pro Phe Gly Ser Met Glu Leu Ala Leu Lys Gln Asn Asn Ser
276         915              920              925
278 gaa gaa aag ttt gcg tct ttg cta gaa aaa cta gaa acc gcc aga cct    2832
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282 gag ggt ggt gag cta gac gac ata tgt gac cag atc cat gaa gtg atg    2880
283 Glu Gly Gly Glu Leu Asp Asp Ile Cys Asp Gln Ile His Glu Val Met
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307 Ala Ala  Gly Val Ser Gln Arg  Glu Ala Ser Met Ala  Val Leu Val
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311 Gln Glu  Met Leu Ser Pro Asp  Leu Ser Phe Val Leu  His Thr Val
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315 Ser Pro  Ala Asp Pro Asp Ser  Asn Leu Val Glu Ala  Glu Ile Ala
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319 Pro Gly  Leu Gly Glu Thr Leu  Ala Ser Gly Thr Arg  Gly Thr Pro
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322 tgg aga  ctc gct tcg ggt aag  ctc gac ggg att gta  caa acc tta     3339
323 Trp Arg  Leu Ala Ser Gly Lys  Leu Asp Gly Ile Val  Gln Thr Leu
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VERIFICATION SUMMARY
PATENT APPLICATION: **US/10/591,540**

DATE: 09/18/2006
TIME: 15:20:33

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